



**NOAA
FISHERIES**

Stock Assessment Improvement Plan

Office of Science & Technology
Stock Assessment Science Program Review
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Office of Science and Technology

Outline

- **Stock Assessment Improvement Plan (2001)**
 - **Purpose & ST role**
 - **Content Summary**
 - **Response & Results**
 - **Challenges**
- **A new Stock Assessment Improvement Plan**
- **Strengths, challenges, solutions**

Stock Assessment Improvement Plan (2001)

Landmark strategic planning document

- Identified program gaps & resource needs
- Justified budget increases
- Guided budget implementation
- Improved the National assessment program



Mace and 7 others (2001)

Stock Assessment Improvement Plan (2001)

ST role (significant)

- Led by Assessment Coordinator
 - Coordination and development
 - Document preparation and communication to leadership
- Utilized for strategic planning
 - Budget initiatives & implementation
 - Track progress and impacts

Stock Assessment Improvement Plan (2001)

Content Summary

- Assessment science and process (nationally & regionally)
- Address NRC (1998) – *Improving fish stock assessments*
- Numerical system for characterizing assessments (Levels)
- Three Tiers of Assessment Excellence
- Resource assessment / requirements to achieve goals

Stock Assessment Improvement Plan (2001)

Content Summary

THREE TIERS OF ASSESSMENT EXCELLENCE

- Context: resource requirements
- Goal: add resources to move up the tiers

TIER 3

Next generation assessments

- ❖ Assess all managed species or species groups at a minimum Level of 3
- ❖ Assess core species at a Level of 4 or 5
- ❖ Explicitly incorporate ecosystem considerations, including environmental effects, oceanography, and spatial analysis

TIER 2

Elevate all assessments to new national standards of excellence

- ❖ Upgrade to at least Level 3 for core species
- ❖ Adequate baseline monitoring for all managed species

TIER 1

Improve assessments using existing data

- ❖ More comprehensive for core species
- ❖ Mine existing databases for species of unknown status

Stock Assessment Improvement Plan (2001)

Content Summary

Ten recommendations, consolidated:

1. Budget & staffing (aim for Tier 2 initially)
2. Outreach (NMFS capabilities, precautionary approach, role of ecosystem in assessments)
3. Data over methods (e.g., cooperative research)
4. Support research and professional development
5. Graduate education and staff training
6. Create 'umbrella' strategic plan (include SAIP)

Stock Assessment Improvement Plan (2001)

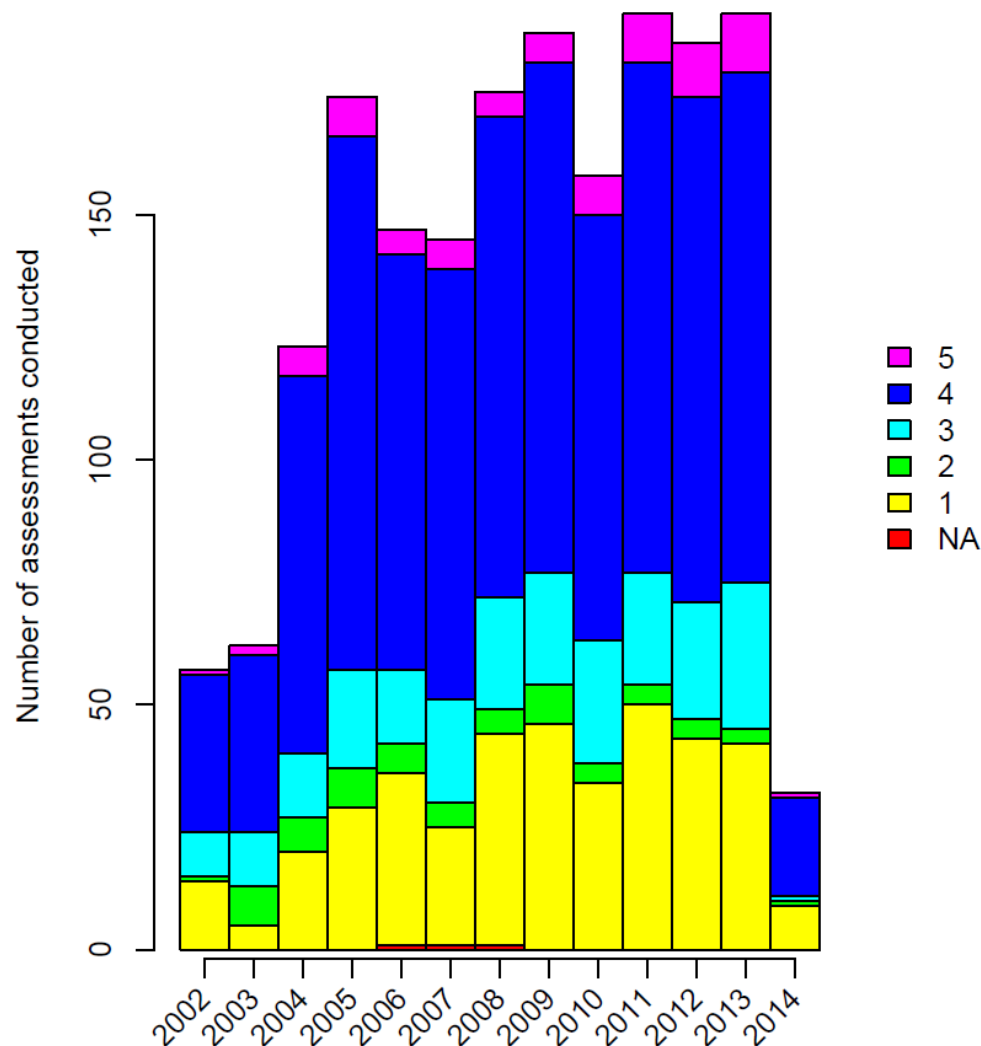
Response

1. Budget & staffing: justification for growth
 - EASA: \$1.7M to \$69M in FY14
2. Outreach: website, Assessment 101, Species Information System, Quarterly Reports, Council Training
3. Data collection: survey days, fishery-dependent programs, cooperative research, advanced sampling, new RFP
4. Research and professional development: assessment methods WG, suite of RFPs, methods workshops
5. Education and training: QUEST faculty, graduate fellowships
6. Strategic plan: developed for NMFS, ST, and science centers

Stock Assessment Improvement Plan (2001)

Results

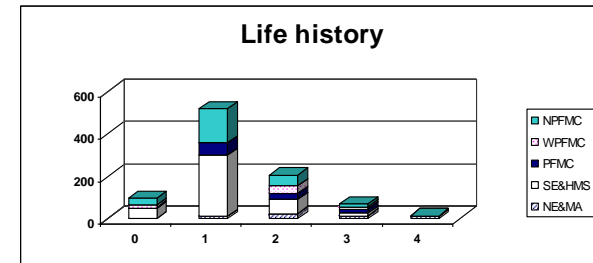
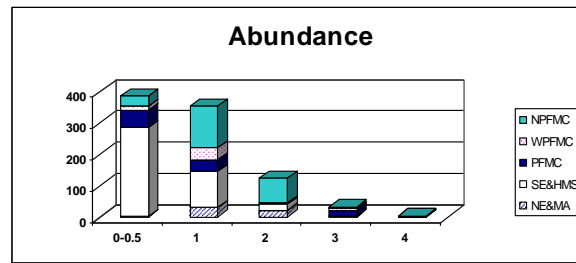
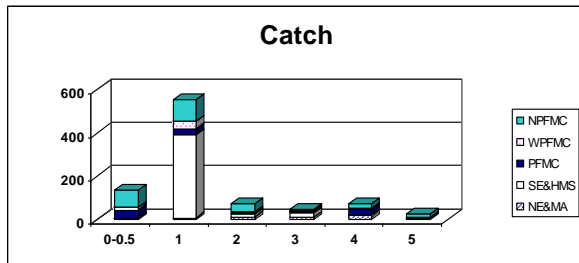
- More assessments/year
- More higher-level assessments
- More data-limited assessments



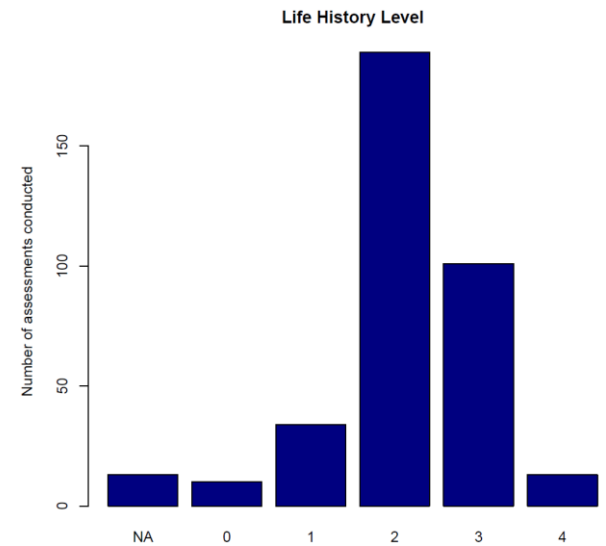
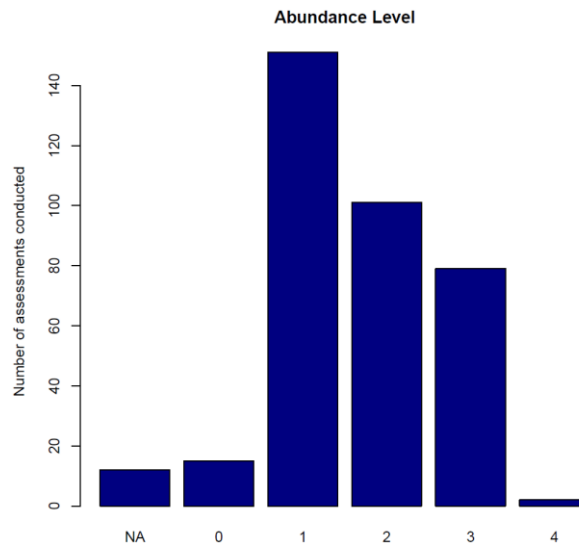
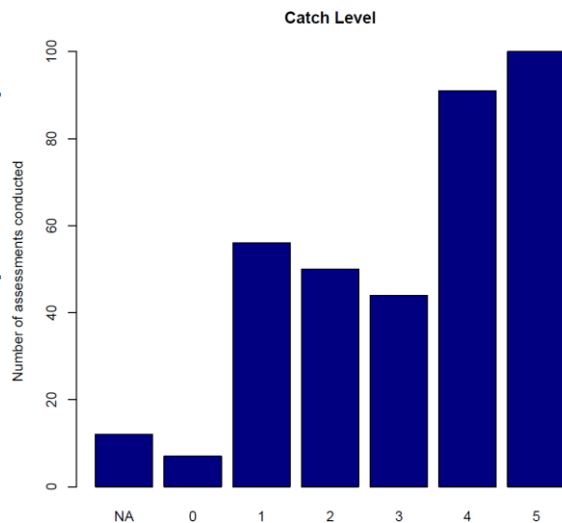
Stock Assessment Improvement Plan (2001)

Results (not a 1:1 comparison)

SAIP (2001)



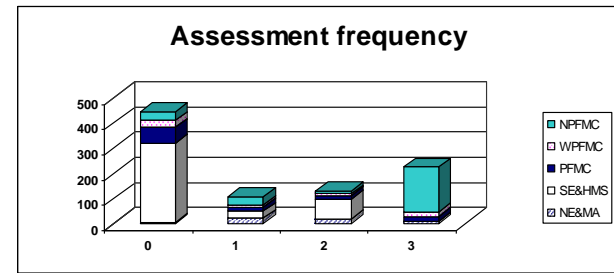
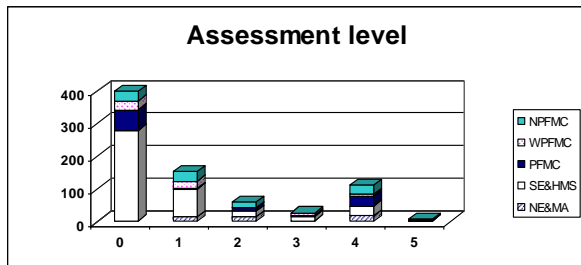
Current (assessed)



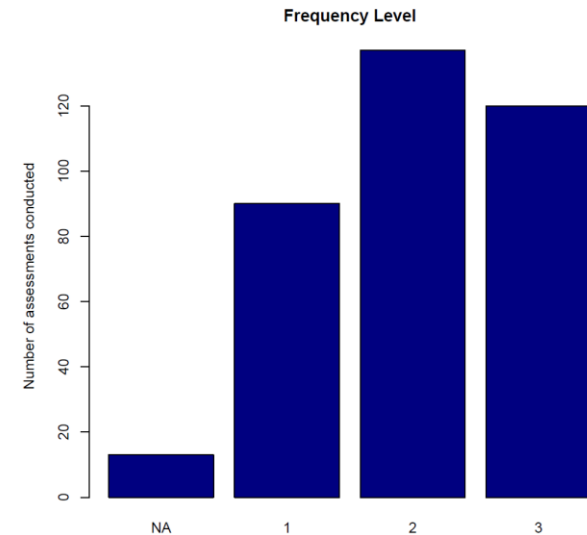
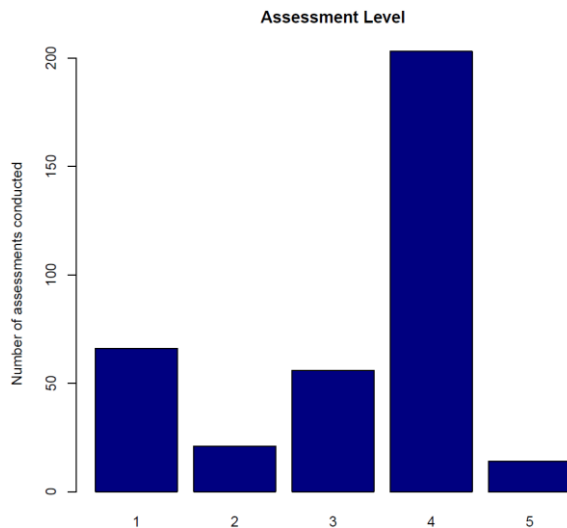
Stock Assessment Improvement Plan (2001)

Results (not a 1:1 comparison)

SAIP (2001)



Current assessed



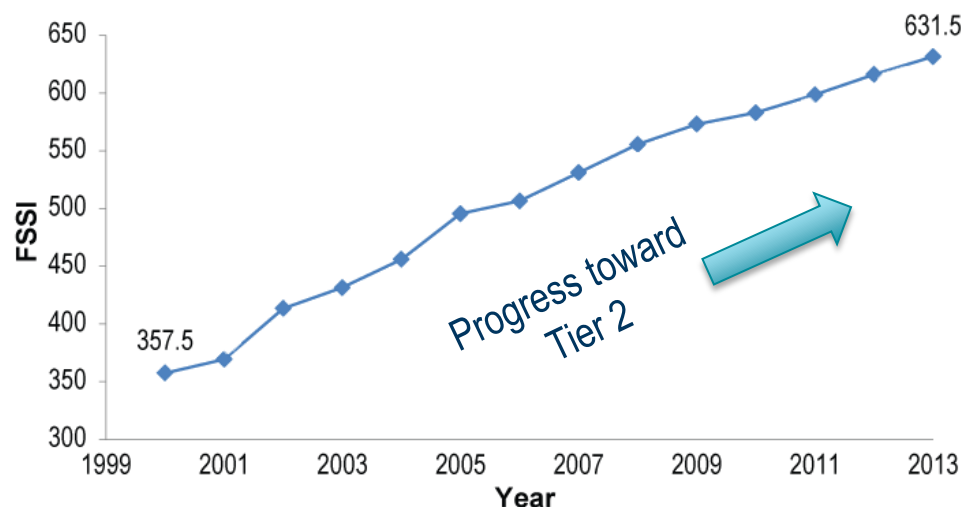
Stock Assessment Improvement Plan (2001)

Results

- Two assessment-related performance measures

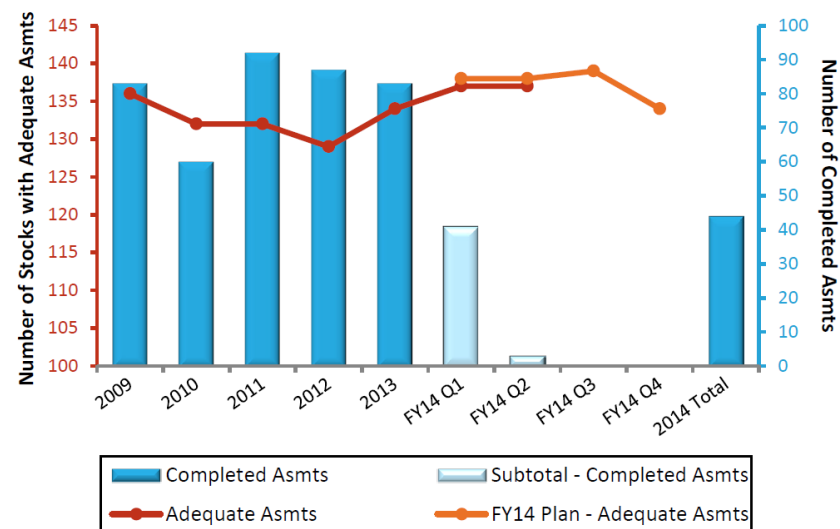
FSSI (subset ~230 stocks)

- Overfishing known: +0.5
- Overfished known: +0.5
- Not overfishing: +1
- Not overfished: +1
- At B_{target} : +1



% Adequate Assessments

- FSSI subset
- Level ≥ 3
- Age ≤ 5 years



Stock Assessment Improvement Plan (2001)

Challenges

- Confusion with Tiers and Levels
 - Tier 3 = next gen. = Level 5 assessment
 - Comprehensive assessments for all stocks?
 - Linear sequence not completely logical & data drive assessment level
 - Low-level assessments can incorporate ecosystem
 - E.g., habitat stratification more important than catchability?
- % Adequate Assessments: not completely responsive to budget and other improvements
- Workforce needs: impractical



A New Stock Assessment Improvement Plan

Necessary to improve strategic planning

- Need for prioritization rather than moving toward Tier 3
- % adequate has plateaued

Approach

- Led by Senior Scientists (Methot and Link)
- Large WG: 28 scientists across science centers, and Offices of ST and Sustainable Fisheries
- Process
 - Monthly teleconferences, chapter subgroup calls, 1 in-person workshop
 - Target 1st draft: Fall 2014

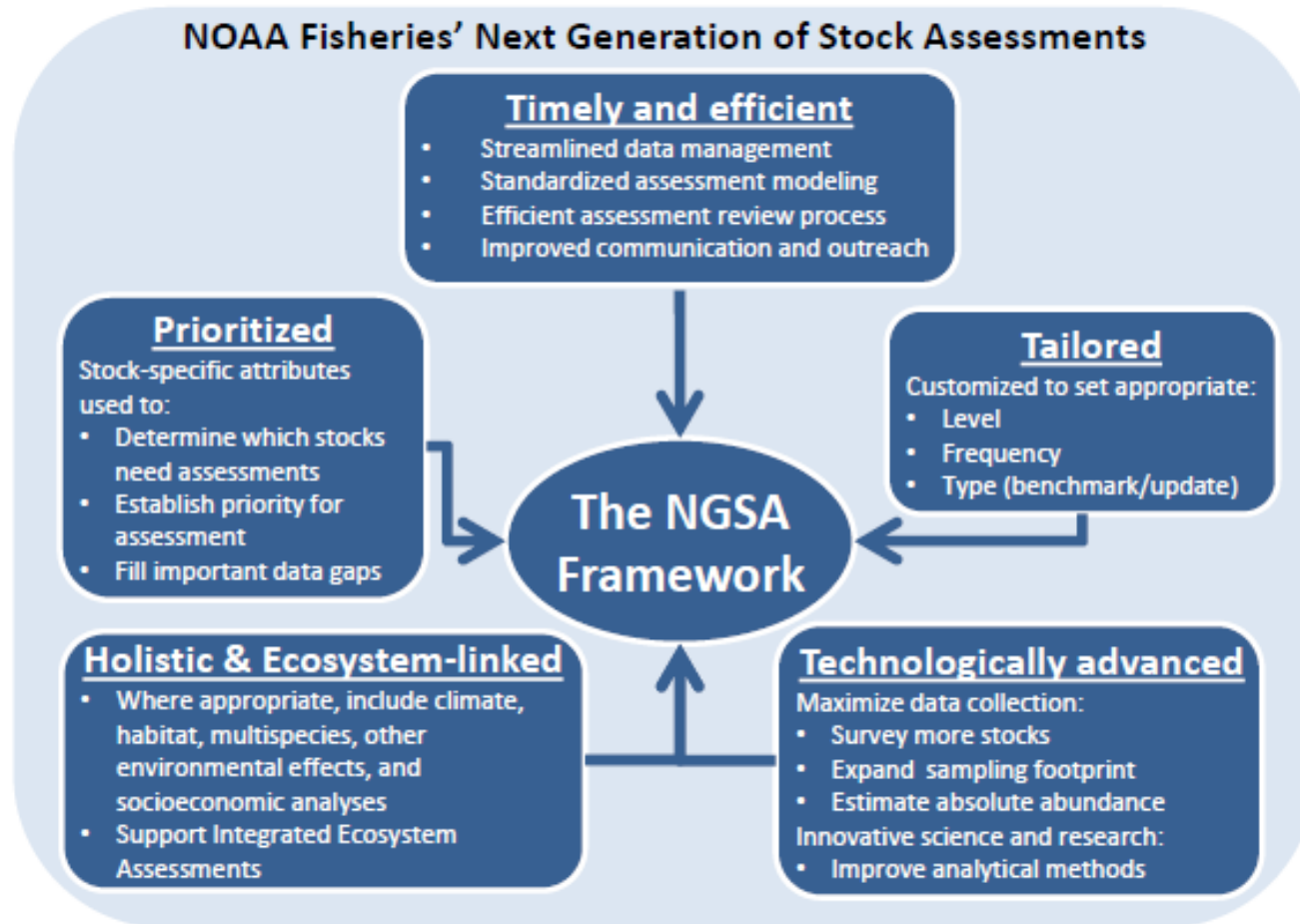
A New Stock Assessment Improvement Plan

ST Role (5 staff on WG)

- Coordinate (development, editing, publishing)
- Support Senior Scientists
- Write, contribute, and help develop ideas
- Help communicate ideas/progress to leadership
- Dissemination (press release, web-hosting, etc.)
- Utilize in planning and budgeting process
- Track progress and results

A New Stock Assessment Improvement Plan

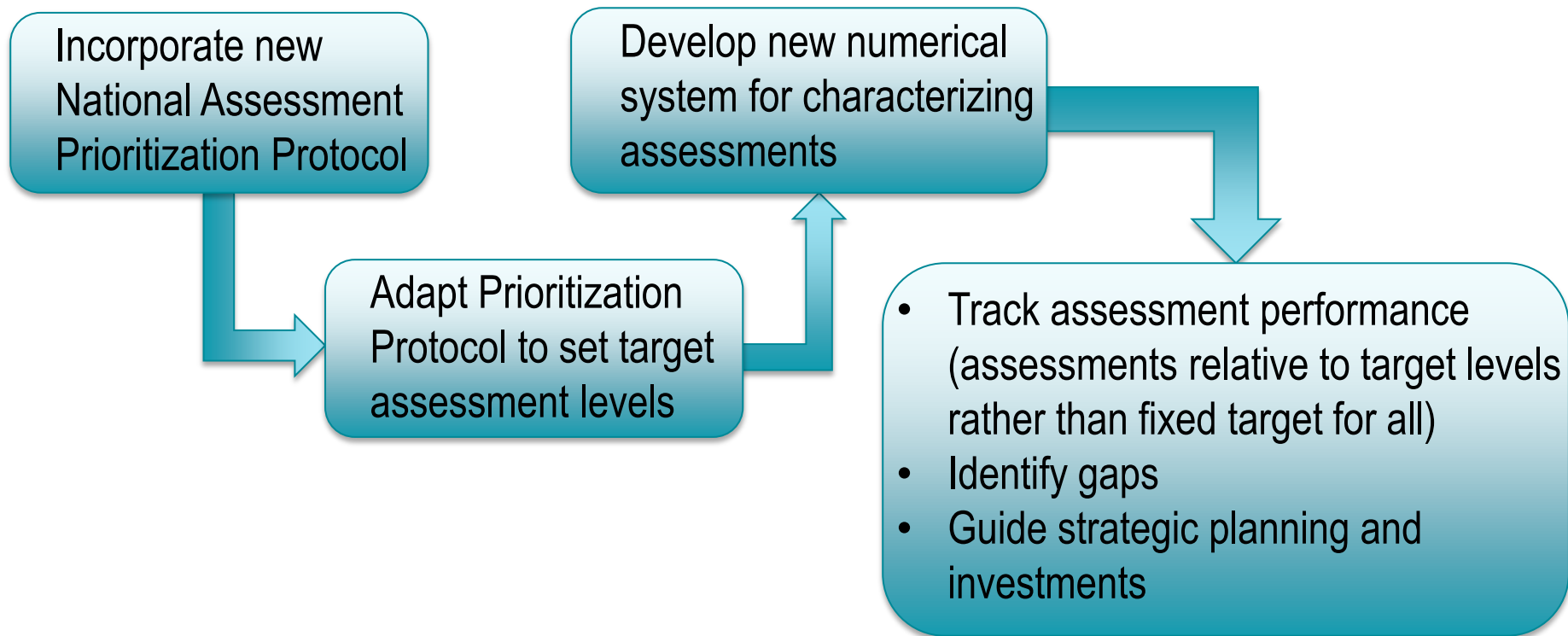
Objective



A New Stock Assessment Improvement Plan

Key development

- Replace TIERS OF EXCELLENCE with PRIORITIZED PORTFOLIO



A New Stock Assessment Improvement Plan

Components

- Section 1: Intro and Accomplishments
- Section 2: Current Enterprise
- Section 3: Next Generation Stock Assessment Enterprise
- Section 4: Summary and Recommendations

Themes

- Data collection, analytical tools, quality assurance and the assessment process, and ecosystem considerations

Strategic Planning and the SAIP

Strengths

- Comprehensive strategic vision encompassing National and Regional priorities
- ST plays significant role and closely links with strategic planning
- Facilitates collaboration across the Agency
- Strong influence over relatively large budget
- Useful for outreach

Challenges

- Large WG spread across the country (including the core group)
- SAIP development requires significant effort from very busy individuals
- NMFS cannot fully address all recommendations because partner institutions and Councils play a role

Strategic Planning and the SAIP

Solutions

- Maintain regular communication; increase deadline enforcement; engage with supervisors to ensure SAIP is high priority for participants
- Establish smaller core group of writers and allow regional participants to review and edit
- Increase communication and outreach broadly to get buy-in from multiple stakeholders (e.g., Councils)



Thank You!



Backup Slides...

Stock Assessment Improvement Plan (2001)

Content

- Numerical system for characterizing assessments (Levels)

Data

Catch

0 = none
1 = landed catch
2 = catch size composition
3 = spatial patterns (logbooks)
4 = catch age composition
5 = total catch by sector (observer)

Abundance

0 = none
1 = fishery CPUE or imprecise survey with size comp
2 = precise frequent survey with age comp.
3 = survey with estimates of q
4 = habitat specific survey

Life history

0 = none
1 = size
2 = basic demographic
3 = seasonal or spatial info (migration/mixing)
4 = food habits data

Models

Assessment

0 = none
1 = index only (commercial/research CPUE)
2 = simple life history equilibrium model
3 = aggregated production
4 = size/age/stage structured
5 = add ecosystem (multispp., envir., spatial, seasonal)

Frequency

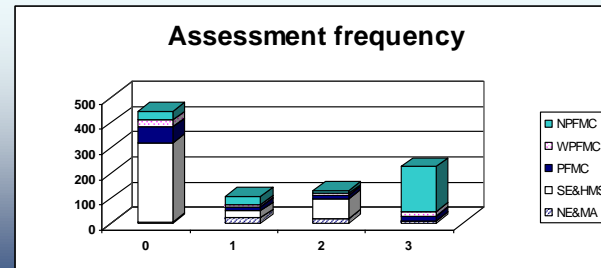
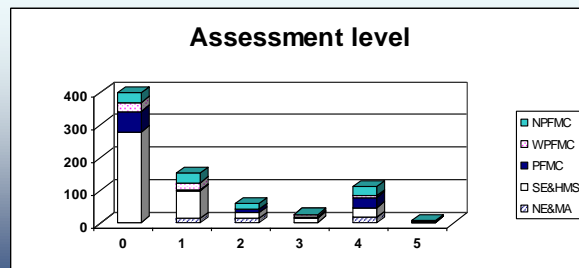
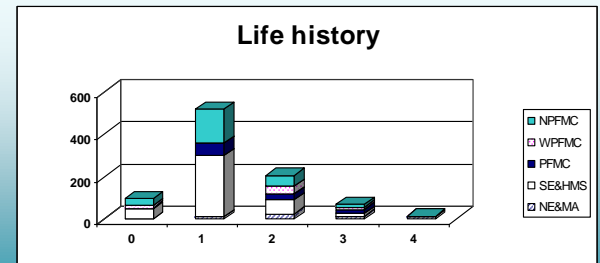
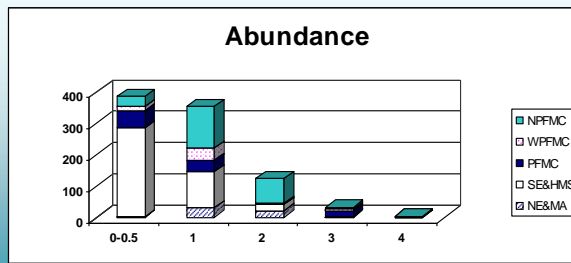
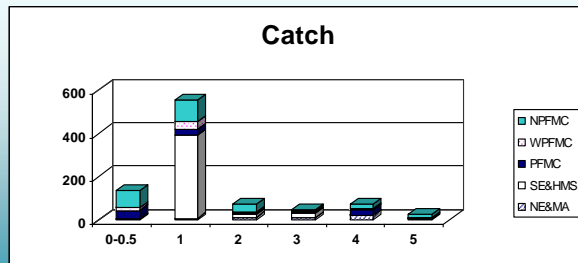
0 = never
1 = infrequent
2 = frequent (2 -3 years)
3 = annual or more



Stock Assessment Improvement Plan (2001)

Content

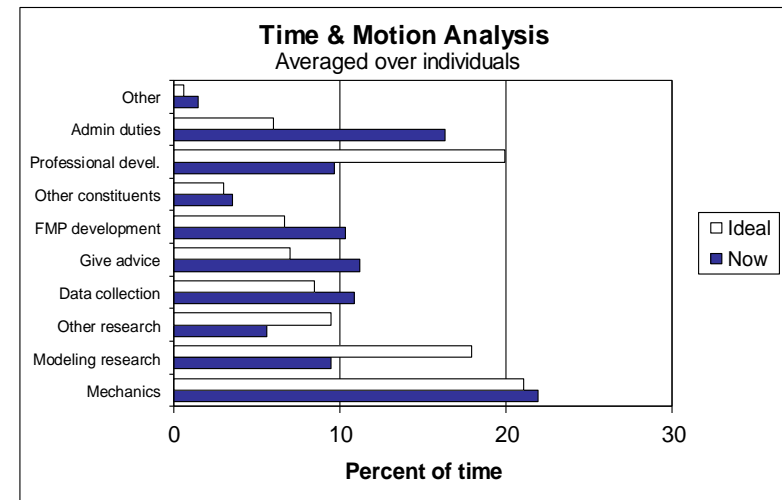
- Numerical system for characterizing assessments (Levels)



Stock Assessment Improvement Plan (2001)

Content

- Determining resource requirements
 - Census of stock assessment staff
 - Time and motion analysis: demands on assessment scientists
- Survey: regional programmatic needs
- Tabulate requirements to achieve TIERS OF EXCELLENCE



Stock Assessment Improvement Plan (2001)

Content

- Staff requirements by region

Activity	Current			Tier 1	Tier 2	Tier 1+2	Tier 3	All Tiers
	In-house	contract	other					
NEFSC	123	49	16	18	43	61	25	86
SEFSC	71	30	46	14	42	56	39	95
SWFSC	80	15	26+	27	60	87	66	153
NWFSC	18	33	59	13	74	87	39	126
AFSC	154	122	54	31	66	97	51	148
Summed FTEs	446	249	201	103	285	388	220	608
\$\$ (FTE x \$150K)				\$15,450K	\$42,750K	\$58,200K	\$33,000K	\$91,200K

*Also presented by scientific activity